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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,359	11/19/2001	Jung-Kee Yoon	PO254/US/DRT	8386

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EXAMINER

HANNAHER, CONSTANTINE

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 12/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,359

Applicant(s)

YOON ET AL.

Examiner

Constantine Hannaher

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Oath/Declaration

2. When applicant states that the post office address is the "same" as residence applicant's representative should keep in mind that a "residence" is a city and state or foreign country. The superfluous information given for residence is accepted as constituting a mailing address. Whether the Office has been able to discern the city and state or foreign country of residence from the information supplied is unknown. See the requirements of 37 CFR 1.63(c)(1) as amended effective November 7, 2000.

Drawings

3. The drawings were received on October 3, 2002. These drawings are acceptable.

4. Figs. 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "109b" and "109c" has been used to designate both a contact hole and an electrode. A

proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to because the first sheet is too pale. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 5 and 6 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Kim (US006399962B1).

With respect to independent claim 5, Kim discloses a method for manufacturing a switching device **T** of the x ray sensor (column 1, lines 10-13) illustrated in Fig. **5f** which comprises the steps of forming a TFT **T** and a ground wire **214** on a transparent (glass, column 2, lines 34-35) substrate **1** (Fig. **5c**), forming a first protecting insulation (column 6, line 42) layer **216** which covers the TFT **T** and ground wire **214** (Fig. **5d**), forming a first contact hole **220** on the ground wire section and patterning storage capacity electrodes **222** connected to the ground wire **214** on the first protecting insulation layer **216**, forming a dielectric (which would protect and insulate) layer **226** on the first protecting insulation layer **216** formed by patterning the storage capacity electrodes **222** (Fig. **5e**),

and forming a second contact hole **218** on one terminal portion (source **212**) of the TFT **T** and forming a pixel electrode **230** connected to one terminal of the TFT on the second layer **226**.

With respect to dependent claim 6, the contact hole **228** in the method of Kim is formed such that a portion of one terminal **212** of the TFT **T** is simultaneously exposed when the first contact hole **220** is formed (Fig. **5d**) and the pixel electrode **230** makes contact with one terminal **212** of the TFT **T** through the contact hole **228** and the second contact hole **218** (Fig. **5e**).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US006399962B1).

With respect to dependent claim 8, the choice of material for the first protecting insulation layer **216** and the dielectric layer **226** in the method of Kim is one within the ordinary skill in the art

since, although these layers are beneficially organic, inorganic layers are a known substitute in the art (column 2, lines 41-46) for the purposes of protection and insulation. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify inorganic insulation material for the layers **216**, **226** formed in the method of Kim.

12. Claims 1-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US006399962B1) in view of Okubo *et al.* (JP 61-3118 A).

With respect to independent claim 1, Kim discloses a switching device **T** of an x ray sensor (column 1, lines 10-13, Fig. **5f**) which comprises a TFT **T** provided on a transparent (glass, column 2, lines 34-35) substrate **1** (Fig. **5c**), a first protecting insulation (column 6, line 42) layer **216** which covers the TFT **T**, storage capacity electrodes **222** connected to a ground wire **214** on the first protecting insulation layer **216**, a dielectric (which would protect and insulate) layer **226** which covers the storage capacity electrodes **222** (Fig. **5e**) formed on the first protecting insulation layer **216**, and a pixel electrode **230** connected to one terminal of the TFT on the second layer **226**. No portion of the storage capacity electrodes **222** are seen in the switching device of Kim to shield the TFT region. Nevertheless, the use of a conducting layer to shield a TFT region is known, as shown by Okubo *et al.* at layer **9**. In view of the advantageous shielding described by Okubo *et al.* for layer **9** in a switching element, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include such a layer in the switching device of Kim, and it would have been apparent with a view to maintain the advantageous number of steps in the manufacture disclosed by Kim to include the shielding layer suggested by Okubo *et al.* in the formation step illustrated in Fig. **5d**, that is, as an extension of the storage capacity electrodes **222**, thus making a portion thereof shield the TFT **T**. The connection to ground wire **214** would serve the same purpose as the connection to gate **2** in the device of Okubo *et al.*

With respect to dependent claim 2, the ground wire **214** in the switching device of Kim is connected by a first contact hole **220** which is formed at a lower portion of the first protecting insulation layer **216** and penetrates through it (Fig. **5d**).

With respect to dependent claim 3, the pixel electrode **230** in the switching device of Kim is connected to one terminal **212** of the TFT **T** through a contact hole **218** which penetrates the first protecting insulation layer **216** and through a contact hole **228** which penetrates the second, dielectric layer **226** (Fig. **5e**).

With respect to dependent claim 4, the choice of material for the first protecting insulation layer **216** and the dielectric layer **226** in the switching device of Kim is one within the ordinary skill in the art since, although these layers are beneficially organic, inorganic layers are a known substitute in the art (column 2, lines 41-46) for the purposes of protection and insulation. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify inorganic insulation material for the layers **216**, **226** in the switching device of Kim.

With respect to dependent claim 7, no portion of the storage capacity electrodes **222** formed in the method of Kim are seen to shield the TFT region. Nevertheless, the use of a conducting layer to shield a TFT region is known, as shown by Okubo *et al.* at layer **9**. In view of the advantageous shielding described by Okubo *et al.* for layer **9** in a switching element, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form such a layer in the method of Kim, and it would have been apparent with a view to maintain the advantageous number of steps in the manufacture disclosed by Kim to include the shielding layer suggested by Okubo *et al.* in the formation step illustrated in Fig. **5d**, that is, as an extension of the storage capacity electrodes **222**, thus making a portion thereof shield the TFT **T**. The connection to ground wire **214** would serve the same purpose as the connection to gate **2** in the device of Okubo *et al.*

Response to Submission(s)

13. This application has been published as US2003/0010922A1 on January 16, 2003.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Constantine Hannaher whose telephone number is (703) 308-4850. The examiner can normally be reached on Monday-Friday with flexible hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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Constantine Hannaher
Primary Examiner